WHAT IS CLAIMED IS:

1. A spring clamp system, comprising:

at least one means for clamping an external workpiece;

said clamping means having two lever arms joining each other at at least one hinge point on a plane of symmetry defined between said lever arms;

each said hinge point between a jaw portion and a handle portion on said lever arms;

at least one gimbal mechanism including at least one radially projecting rotation spindle;

means for releasably attaching at least one of said handle portions to said rotation spindle during a use of said spring clamp system; and

means for interlock repositioning said one handle portion through at least two planes of motion during said use, thereby providing an easily repositioned spring clamp system.

2. A spring clamp system, according to claim 1, further comprising:

means for aligning and strengthening each said handle portion during an opening of said jaw portions;

said means for aligning and strengthening including a plurality of curved strengthening ribs arrayed alternatingly along an inner concave surface of each said handle portion; and

each said rib having a convex curved surface, whereby during said opening, said opposing convex curved surfaces contact said inner concave surfaces and slidably guide said handle portions into mutual alignment while resisting an external torsion applied to said handle portions during said opening.

3. A spring clamp system, according to claim 1, further comprising:

a pair of opposing gimbal housings in said gimbal mechanism;

said gimbal housings having a common pivot axis;

a bolt pivotally joining said opposing gimbal housings along said axis;

means for interlock repositioning including means for camably releasing said bolt during an adjustment of said gimbal mechanism and allowing said gimbal housing to rotate about said axis;

a spacer projecting perpendicular to said axis on an inside of each said gimbal housing proximate said axis; and

a spindle housing projecting perpendicular to said axis on said inside of each said gimbal housing distal said axis.

4. A spring clamp system, according to claim 3, further comprising:

a plurality of housing teeth radially arrayed on an inside surface of each said gimbal housing;

a plurality of spacer teeth radially arrayed on a top surface of each said spacer interlocking with corresponding housing teeth during said use;

a plurality of spindle housing teeth radially arrayed on a top surface of each said spindle housing; and

said spindle housing teeth interlocking with corresponding housing teeth during said use, whereby said means for interlock repositioning at least tightly interlocks each said gimbal housings after said adjustment.

5. A spring clamp system, according to claim 4, further comprising:

at least one U-shaped spindle section in each spindle housing;

at least one spindle ring groove within each respective U-shaped spindle section;

at least one spindle ring projecting from an outer circumference of each said rotation spindle; and

each said spindle ring pivotally in respective spindle ring grooves, thereby retaining each said rotation spindle in said spindle housing during an adjustment and said use.

6. A spring clamp system, according to claim 5, further comprising:

at least one of a substantially rigid and an elastomeric grommet bounding an outer end circumference of each said rotation spindle;

at least one grommet groove in each U-shaped spindle section proximate said spindle ring groove; and

each said grommet pivotally positionable in respective grommet grooves during said adjustment, thereby aiding retention of said rotation spindle in said spindle housing during said use.

7. A spring clamp system, according to claim 6, wherein:

at least a first portion of an outer circumference of said grommet extending from said U-shaped spindle section into an engageable alignment with ones of said plurality of spindle housing teeth; and

said plurality of housing teeth engaging said outer circumference and restraining said rotation spindle during said use, thereby firmly fixing a rotation position of said rotation spindle relative to said gimbal mechanism.

8. A spring clamp system, according to claim 7, wherein:

said grommet further comprises:

at least one engaging tooth member on a least a portion of an outer perimeter of said grommet; and

said at least one engaging tooth member engaging respective said housing teeth during an engagement of said means for interlock repositioning.

9. A spring clamp system, according to claim 7, further comprising:

at least one toothed projection in said at least one grommet groove;

at least a second portion of said outer circumference of said grommet in an engageable alignment with said at least one toothed projection in said at least one grommet groove; and

said at least one toothed projection engaging a respective portion of said outer circumference and restraining said rotation spindle during said use, thereby firmly fixing a rotation position of said rotation spindle relative to said gimbal mechanism.

10. A spring clamp system, according to claim 7, wherein:

said grommet further comprises:

at least one engaging tooth member on a least a portion of an outer perimeter of said grommet;

said at least one engaging tooth member engaging respective said housing teeth during an engagement of said means for interlock repositioning;

said at least one grommet groove includes at least one toothed projection;

at least a second portion of said outer circumference of said grommet in an engageable alignment with said at least one toothed projection in said at least one grommet groove; and

said at least one toothed projection engaging a respective portion of said outer circumference and restraining said rotation spindle during said use, thereby firmly fixing a rotation position of said rotation spindle relative to said gimbal mechanism.

11. A spring clamp system, according to claim 7, further comprising:

a plurality of strengthening ribs radially arrayed on an outside of each said gimbal housing;

a locking lever in said means for camably releasing said bolt; and

an inner surface of said locking lever matching an outer profile of said strengthening ribs, whereby during said use said gimbal mechanism has a compact shape.

12. A spring clamp system, according to claim 3, further comprising:

an attachment clip in said means for releasably attaching;

said attachment clip fixably extending from an outer surface of each said rotation spindle;

a spring member on each said attachment clip;

an end of each said handle portion bounding a clip-opening in communication with a locking slot and a clip-lock release; and

said clip-lock release positively retaining said spring member in said locking slot during an attachment, and releasing said spring member during a separation, whereby said spring member and said means for releasably attaching provides a positive snap release between said handle portion and said rotation spindle.

13. A spring clamp system, comprising:

at least one clamping mechanism adapted to clamp a workpiece;

said clamping mechanism having two lever arms joining each other at at least one hinge point on a plane of symmetry defined between said lever arms;

each said hinge point between a jaw portion and a handle portion on said lever arms such that during a use said handle portions can be moved between a closed position in which said jaw portions are proximate each other and an open position in which said jaw portions are spaced apart;

means for aligning and strengthening said handle portions during an opening of said jaw portions, whereby said means for aligning reduces misalignment of and guides said handle portions into a sliding mutual alignment and resists an external torsion applied to said handle portions during said opening; and

gimbal means for lockably positioning one of said handle portions through at least two planes of motion relative to said gimbal means.

14. A spring clamp system, according to claim 13, wherein:

said means for aligning and strengthening includes a plurality of strengthening ribs arrayed alternatingly along an inner concave surface of each said handle portion; and

each said rib having a convex curved surface such that during said opening of said jaw portions, said opposing convex curved surfaces contact said inner concave surfaces and slidably guide said handle portions into alignment.

15. A spring clamp system, according to claim 13, further comprising:

at least one rotation spindle projecting radially from said gimbal means;

said gimbal means including means for releasably attaching said one of said handle portions to said rotation spindle during said use; and

spring means interposed between said arm members providing an urging closing force to said jaw portions during said use.

16. A spring clamping system, according to claim 15, wherein:

said aligning and strengthening means includes means for retaining legs of said spring means in respective handle portions; and

said means for retaining includes inner surfaces on each said strengthening rib extending from said inner concave surface of each said handle portion to said convex curved surface,

thereby trapping said legs of said spring means between said inner surfaces and said inner concave surface and minimizing damage to said handle portions.

17. A spring clamping system, according to claim 13, further comprising:

at least one of a swivel gripping tip and a needle-nosed gripping tip operably joined to a gripping end of each said jaw portion and adapted to grip said workpiece.

18. A spring clamp system, according to claim 15, further comprising:

an attachment clip in said means for releasably attaching;

said attachment clip fixably extending from an outer surface of each said rotation spindle;

a spring member on each said attachment clip;

an end of each said handle portion bounding a clip-opening in communication with a locking slot and a clip-lock release; and

said clip-lock release positively retaining said spring member in said locking slot during an attachment, and releasing said spring member during a separation, whereby said spring member and said clip-lock release provide a positive snap release between said handle portion and said rotation spindle.

19. A clamping mechanism, comprising:

two arm members defining a plane of substantial symmetry;

said arm members pivotally joining each other at at least one hinge point on said plane of symmetry;

said at least one hinge point between respective jaw portions and handle portions such that during a use said handle portions can be moved between a closed position in which said jaw portions are proximate each other and an open position in which said jaw portions are spaced apart;

spring means interposed between said arm members providing an urging closing force to said jaw portions;

means for retaining legs of said spring means in respective handle portions during said use; and

means for aligning and strengthening said handle portions during an opening of said jaw portions, whereby said means for aligning guides said handle portions into a sliding mutual realignment and resists an external torsion applied to said handle portions during said opening.

20. A spring clamping mechanism, according to claim 19, wherein:

said means for aligning and strengthening includes a plurality of curved strengthening ribs arrayed alternatingly along an inner concave surface of each said handle portion; and

each said rib having at least a convex curved surface such that during said opening of said jaw portions, said opposing convex curved surfaces contact said inner concave surfaces and slidably guide said handle portions into alignment.

21. A spring clamping mechanism, according to claim 20, wherein:

said means for retaining includes inner surfaces on each said strengthening rib extending from said inner concave surface of each said handle portion to said convex curved surface, thereby trapping said legs of said spring means between said inner surfaces and said inner concave surface and minimizing damage to said handle portions.

22. A spring clamping mechanism, according to claim 19, wherein:

a pair of hinge points are provided.

23. A spring clamp system, comprising:

at least one clamping means for clamping a first item; and

gimbal means for lockably positioning said first means for clamping in a releasable and adjustable positive-lock position relative to two planes of movement.

24. A spring clamping mechanism according to claim 23, further comprising a second clamping means for clamping a second item.

25. A spring clamping mechanism according to claim 24, wherein:

said gimbal means for lockably positioning includes a plurality of toothed interlocks, whereby said means for lockably positioning prevents relative movement between said first and second means for clamping during an engagement.

26. A spring clamping mechanism according to claim 23, further comprising: attaching means for releasably securing said gimbal means to a support surface.

27. A spring clamping mechanism, according to claim 26, wherein:

said gimbal means includes second means for lockably positioning said attaching means in an adjustable positive-lock position relative to at least two planes of movement, whereby said spring clamp system enables said at least one clamping means to be adjusted relative to said support surface through at least three planes of movement.